

B.) Please amend the specification as follows:

Page 1, paragraph 1 as follows:

~~Agents Ref: 115482W0-H/JCC/4p~~

Title of the invention

Multiple drum apparatus for high speed scanning of microwave, mm-wave and infrared radiation

Title: "Scanning Apparatus"

Background of the Invention

Field of the invention: The present invention ~~THE PRESENT INVENTION~~ relates to a scanning apparatus operable in the infrared, mm-wave or microwave ranges of electromagnetic radiation.

It is an object of the present invention to provide an improved scanning apparatus operable with radiation of the wavelengths indicated, having a large effective aperture and which is able to repeatedly scan, at a high rate, a two-dimensional (e.g. altitude and azimuth) field of view, and which yet can be constructed at reasonably low expense.

Page 1, paragraph 3 as follows:

Summary of the Invention

In accordance with the present invention, there is provided scanning apparatus operable in the microwave, mm-wave and infrared ranges and comprising a support structure, a primary drum which is mounted in said support structure for rotation relative to the

support structure about a central axis of the primary drum, said primary drum being hollow and internally of regular polygonal form to provide a plurality of internally presented sides or facets, which are capable of reflecting the radiation concerned, a radiation director such radiation emanating from a field view of view of the apparatus, being a field of view which is fixed with respect to said supporting structure, (as opposed to rotating with the primary drum), onto the internally presented sides or facets of the primary drum, such that in each of a succession of line scanning periods, as herein defined, radiation emanating from part of said field of view is directed onto a said reflective reflective side or facet of the primary drum to be reflected therefrom onto a further receiving assembly comprising a rotating faceted reflector, herein referred to as a secondary drum, arranged to reflect the radiation striking it from the first drum onto a radiation receiver or sensor, the apparatus being so arranged that the radiation from said field of view is focused focussed onto said radiation receiver or sensor and wherein said secondary drum is arranged to be rotated, about an axis parallel with the rotary axis of the primary drum, in synchronism with the latter, in such a way that, over said scanning period, radiation from substantially all of a respective said facet of the primary drum, or from substantially all of a predetermined region of such facet, can reach said receiver or sensor via said secondary drum.

Page 2, paragraph 2 as follows:

Brief description of the several views of the drawings

Embodiments of the invention are described below with reference to the accompanying schematic drawings in which:-

Figure 1 is a plan view representing part of a first embodiment of the invention;

Figure 2 is a plan view, to a larger scale, of a detail in Figure 1;

Figure 3 is a sectional view representing part of a second embodiment; and

Figure 4 is a sectional view representing part of a third embodiment.

Page 3, paragraph 1 as follows:

#### Detailed description of the invention

In the embodiments of the invention described below, the apparatus in each case, uses two rotating components, mounted for rotation in a fixed support structure which is not shown in the drawings. The first component consists of a primary drum in the form of a hollow regular polygon with reflective faces (also referred to herein as facets), or with polarising faces that are used in a twist reflector configuration. This first component is used in conjunction with an optically powered element such as a lens, concave mirror or Mangin mirror to scan the scene. This optically powered element may be stationary or mounted on the faces of the primary drum. In the preferred embodiments, each face of the primary drum or hollow polygon is inclined to the axis of rotation of the polygon at a different angle to the other faces. This provides a scan in a direction orthogonal to that achieved by the rotation of the primary drum or hollow polygon, the scan in the direction achieved by such rotation being herein referred to as a “line scan”.

Page 16, paragraph 1 as follows:

#### Abstract

Title: “Scanning Apparatus”

#### Abstract of the disclosure